

## ABSTRACT

A process for the recovery of high purity hydrogen for recycling to a hydroprocessing or similar unit located in an integrated refinery facility includes sampling and providing analytical information on the make-up of the hydrogen-containing feedstream entering the bottom of a stripping column and the composition of the hydrogen recycle stream at, and/or approaching the top of the stripping column to a computer-directed control system in real time for the purpose of controlling the selection and the volumetric flow rate of one or more "refinery solvents" into the column to maximize the removal of non-hydrogen gases from the feedstream and to thereby maximize the percentage of hydrogen in the recycle gas stream. The "refinery solvent" used in the stripping column is any one or more compounds that are generated as product or by-product streams in the integrated refinery facility that are readily available for diversion in the required quantities for use a solvent to absorb or strip one or more compounds from the hydrogen-containing feedstream at the integrated refinery facility. The refinery solvent is preferable subsequently flashed to remove separated compounds and returned to its original product stream.